

### Amendments to the Claims

1. (original) A process for mono-alkylating at least one monocyclic aromatic hydrocarbon comprising reacting the monocyclic aromatic hydrocarbon with at least one -olefin having from 4 to 20 carbon atoms in the presence of an anhydrous alkane sulfonic acid at a temperature below about 280°F .

2. (original) The process of claim 1 wherein the reaction temperature is in the range of from about 180° F to about 280°F.

3. (original) The process of claim 1 wherein the monocyclic aromatic hydrocarbon is selected from the group consisting of benzene, toluene, *o*-xylene, *m*-xylene, *p*-xylene, hemimellitene, pseudocumene, mesitylene, prehnitene, isodurene, pentamethylbenzene, ethylbenzene, *n*-propylbenzene, cumene, *n*-butylbenzene, isobutylbenzene, *sec*-butylbenzene, *tert*-butylbenzene, *p*-cymene, biphenyl, diphenylmethane, triphenylmethane, 1,2-diphenylethane, styrene, *trans*-stilbene, *cis*-stilbene, *unsym*-diphenylethylene, triphenylethylene, tetraphenylethylene, phenylacetylene, and diphenylacetylene.

4. (previously presented) The process of claim 3 wherein the monocyclic aromatic hydrocarbon is selected from the group consisting of benzene, toluene, *o*-xylene, *m*-xylene, *p*-xylene, and mixtures thereof.

5. (original) The process of claim 4 wherein the monocyclic aromatic hydrocarbon is *o*-xylene.
6. (original) The process of claim 1 wherein the, -olefin is selected from the group consisting of 1-decene, 1-dodecene, 1-tetradecene, 1-hexadecene, and 1-octadecene.
7. (original) The process of claim 6 wherein the, -olefin is 1-dodecene.
8. (original) The process of claim 1 wherein the alkyl moiety of the anhydrous alkane sulfonic acid is one of from one to four carbon atoms.
9. (original) The process of claims 8 wherein the anhydrous alkane sulfonic acid is anhydrous methane sulfonic acid.
10. (original) The process of claim 1 wherein the reaction between the the monocyclic aromatic hydrocarbon with an, -olefin is initiated at a temperature in the range of from about 180 to about 200° F .
11. (original) The process of claim 10 wherein, after initiation, the reaction temperature is maintained at a temperature in the range of from about 250 to about 270° F until alkylation is complete.

12. (original) A process for mono-alkylating o-xylene comprising:

A) mixing o-xylene, 1-dodecene, and anhydrous methane sulfonic acid in a reaction vessel;

B) initiating a reaction between the o-xylene and 1-dodecene by heating the contents of the reaction vessel to a temperature in the range of from about 180 to about 200° F; and

C) maintaining the contents of the reaction vessel, after initiation, at a temperature of in the range of from about 250 to about 270° F until alkylation is complete.

13. (new) The process of claim 1 wherein said monocyclic aromatic hydrocarbon is reacted with a stoichiometric amount of said at least one , -olefin having from 4 to 20 carbon atoms.

14. (new) The process of claim 13 conducted in the presence of methane sulfonic acid.

15. (new) The process of claim 13 wherein the resultant monoalkylate product is substantially free from monocyclic aromatic hydrocarbon and, -olefin.